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ECONOMIC COMMISSION FOR AFRICA

Scientific Round Table on the Climatic Situation and Drought in Africa*

Addis Ababa, 20-23 February 1984

DRAFT REGIONAL PLAN OF ACTION TO COMBAT THE IMPACTS OF DROUGHT IN AFRICA

* Organized by the United Nations Economic Commission for Africa (ECA) in co-sponsorship with the United Nations Environment Programme (UNEP), the United Nations Sudano-Sahelian Office (UNSO), the United Nations Educational, Scientific and Cultural Organization (UNESCO), Food and Agriculture Organization of the United Nations (FAO), the World Meteorological Organization (WMO) and the Organization of African Unity (OAU).

PREAMBLE

1. The catastrophic drought which is currently afflicting many parts of Africa brought to a head a problem that has been lingering for decades and has served to lend further evidence to the fact that adverse climatic conditions and drought have, unfortunately, become recurrent and persistent phenomena in our continent, and that they are, very well, likely to repeat themselves at some unspecified future dates.

2. The severity and persistence of the present drought may be readily illustrated by mentioning that it has affected most African countries, thus spreading itself beyond the boundaries of the Sudano-Sahelian region to reach the forested and coastal areas of Eastern, Central and Southern Africa, and that it essentially represents a continuation of the 1968 drought which, in essence, has not yet ended.

3. The adverse impacts of the current drought spell hardly need to be over-stated. It has led to serious food scarcity, which has further exacerbated an already unfavourable food situation - malnutrition, diseases, famine, loss of human lives, sharp depletion of animal stocks, increased poverty - particularly among the disadvantaged groups - a degraded environment, imbalances in and depletion of water resources, aggravation of employment problems, human suffering and hardship and severe dislocations of the normal life situation and the fragile economies of many African countries. Those adverse impacts are made devastatingly worse when it is considered that the majority of the countries that are directly affected by the drought are among the Least Developed Countries in Africa who are least equipped to deal with their perennial and mounting economic problems, let alone the vagaries of such a calamity.

4. The aforementioned consequences of the drought have been further aggravated through an increased disruption in the balance between the human/livestock p population on the one hand and the physical resources on the other. This has been brought about by increasing pressure from the human/livestock population on the land and the harmful human responses to the climatic variability and drought.

5, Painfully aware of the severity of the current drought and its adverse impacts on the socio-economic systems and the physical environments of their countries and conscious of the spirit of Lagos Plan of Action which calls for collective and interdependent action in solving common problems of the Continent, the Conference of Ministers of the Economic Commission for Africa at its Eighteenth Session, by Resolution 473 (XVIII), urgently requested the Executive Secretary of ECA to organize a Special Scientific Round Table on the Climatic Situation and Drought in Africa, to which all member States in addition to international experts will be invited, to examine the periodicity, trends and effects of drought in Africa and to propose measures that can be t taken in the short-, medium- and long-terms to deal with the problem.1/ It further requested ECA's Executive Secretary to submit a report on the outcome of the Sceintific Round Table to the Ninteenth Session of the Commission Tenth Conference of Ministers.

6. In the spirit of the Plan of Action to Combat Desertification (1977), the Mar del Plata Action on Water (1977) and the 1979 Addis Ababa Seminar on Alternative Patterns of Development and Life-styles for the frica Region which identified, among other things, "climatic conditions and fragility of ecosystems" as one of the "constraints on evolving and implementing alternative patterns of development",2/ and the Regional Food Plan for Africa (1980), the Heads of State of the Organization of African Unity (OAU) did commit themselves, on behalf of their governments and peoples, in the Lagos Plan of Action to take urgent action to provide the political support necessary to achieve self-reliance in all the sectors of development including co-operation" in the preservation, protection and improvement of the natural environment" and achieve self-sufficiency in food production and supply.3/

1/ E/ECA/CM.9/30 Economic Commission for Africa, Annual Report, 1 May 2 May 1983, Supplement No. 13, p. 94, Operative para. 1.

2/ E/CN.13/SAP/3: Report of the Seminar on alternative patterns of development and life-styles for the African region (1979) para. 22, p. 9.

3/ ECA/ECO/9/(XIV)Rev.2: Lagos Plan of Action for the Implementation of the Monrovia Strategy for the Economic development of Africa (OAU, 1980) - Preamble.

7. Cognizant of the principles of the Lagos Plan of Action, the seriousness of the current drought situation and its adverse consequences as well as the possibility of the continuation and/or recurrence of drought in the African region and having taken note of the report and recommendations of the Scientific Round Table, we, the Ministers of Planning on behalf of our Governments and People do pledge to implement, individually and collectively, the provisions of the below herein outlined Regional Plan of Action, aiming at equipping our countries with the means to better monitor and predict the drought and deal with its adverse impacts and to rehabilitate our economies in a sustained, co-ordinated and integrated manner. We do also undertake to give high priority to the allocation of increased financial resources, the enhancement of manpower and institutional capabilities and the enactment and enforcement of the necessary policies that are required for the successful implementation of the Regional Plan of Action.

8. In this context, we wish to appeal to the international community to provide increased resources to those African countries that have been affected by the drought in order to assist them in the successful implementation of the Regional Plan of Action to Combat the Impacts of Drought in Africa. We would also like to request the Secretary-General of the United Nations to provide additional resources to the Economic Commission for Africa and that the Specialized Agencies of the United Nations System and the secretariat of the Organization for African Unity should allocate increased resources for the implementation of the Regional Plan of Action to combat the impacts of drought in Africa. Furthermore, we recommend that the implementation of this Plan of Action should be co-ordinated by the Economic Commission for Africa with the collaboration of the United Nations systems, the Organization for African Unity, the other competent regional organizations as well as interested governmental and non-governmental organizations.

I. SHORT-TERM MEASURES

9. Short-term measures refer to activities that need to be undertaken on urgent basis during the biennium 1984-1985 at the national, regional and sub-regional levels by African countries and their institutions, by regional and international organizations and by members of the international community.

NATIONAL LEVEL

A. Climate

10. Three major problems exist in Africa to-day regarding the use of meteorological and hydrological information to help alleviate the effects of drought:

(a) Lack of public awareness of the benefit of meteorological and hydrological services to combat drought and to promote socio-economic development, resulting in insufficient provision, by some countries of necessary funds and organizational support;

(b) Inadequate interface of meteorological services with the user community to provide the information which they need to solve in appropriate and usable forms their problems associated with drought;

(c) Inadequate meteorological and hydrological data (both too few stations and insufficient dissemination mechanisms), despite the vigorous efforts of many national meteorological services. This results in slow detection and warning of droughts and hampers research on the causes of drought. Specifically, there is an insufficient number of upper air stations, the surface meteorological data often are unavailable in a timely manner, and some long-term climate stations have been closed or are not properly maintained.

11. It is recommended, therefore, that African countries should take prompt action to:

(i) strengthen national meteorological and hydrological services, by providing sufficient resources and proper organizational support, so that they can provide the necessary services to the nation in combatting drought, including establishing appropriate user interfaces;

(ii) immediately upgrade the capability of national meteorological and hydrological data-gathering networks, including the reopening of observing

stations that, for one reason or another, have been closed down; provide necessary maintenance for instruments at all stations; and increase the number of upper air observing stations to the point where drought processes can be analyzed and better predicted.

(iii) ensure that the necessary meteorological and hydrological data are observed regularly, conceived, processed and disseminated promptly by improving transmission and data-handling capabilities.

(iv) establish national drought control plans that can help to alleviate the efforts of drought. Such drought control plans should place emphasis on the establishment of interdisciplinary groups to continuously monitor the occurrence and progress of drought. The drought control plans should contain provisions for the implementation of specific actions to detect drought and to help alleviate its effects on agricultural production and water management.

B. Food and Agriculture

12. Because of the magnitude of the agricultural and livestock sector and its contribution to the national economies in Africa, the fact that the African population is predominently engaged in agricultural and agriculture-related activities as well as the fact that the impact of drought is more directly felt by this sector and the population engaged within it, African countries need to pay special attention to the implementation of short-term measures aiming at mitigating the adverse impacts of drought on this vital sector, In this regard urgent action should include the following:

1. Food and Feed Security

(a) All African drought-prone countries who so far have not done so, should establish sound national crop forecasting and early warning systems, that would provide them with pre-harvest forecasts for food production and early assessment of likely supplies, as a central component in the planning and implementation of national food security measures and in the assessment of possible food requirements. Such a system should also make donors in a better position to plan their relief operations in advance of the food shortages and guarantee the timely flow of relief supplies into the affected areas.

(b) All African drought-prone countries should elaborate sound food and feed security plans designed to protect the population in the areas that are likely to be affected by drought against the loss of food and animal feed supplies, agricultural crops and livestock and ensure a co-ordinated and timely flow of relief supplies. Such food and feed security plans should incorporate, inter-alia, the following elements:

(i) Building-up and improvement of food, seed and fodder security stocks and storage of vaccines, equipment and related facilities for control of animal diseases in normal periods, particularly in those areas are vulnerable to drought; as well as related facilities with particular focus on storage structures and distribution systems;

(ii) Effective mobilization of all available local food and animal feed resources in case of emergency;

(iii) Establishment of emergency markets at the national and regional levels to enable and encourage pastoralists to sell their excess livestock before their condition is deteriorated;

(iv) Strengthening of favourable responses such as cattle sharing in traditional risk-insurance schemes;

(v) Identification and establishment of grazing reserves and the preparation of emergency policies for the redistribution of the livestock population during drought periods; and

(vi) The determination of the strict minimum survival needs of the human and livestock population in drought-prone areas.

2. Range Management

13. It is essential to minimize the degradation of rangelands that frequently occurs in arid and semi-arid areas as a result of an imbalance between livestock population size and rangeland carrying capacity, a degradation that is easily accelerated during drought episodes. Consequently, it is vitally important that African governments should elaborate integrated and realistic range

management strategies and enact and enforce policies that would guarantee the successful implementation of those strategies in order to ensure an optimal rationalization of the livestock production at all times in line with the carrying capacity of the rangelands, taking into account the existing economic and socio-cultural conditions of the nomadic pastoralism. Such stragegies and policies should include the following elements:

(i) Assessment and determination of an optimal ecological carrying capacity of the rangelands;

(ii) Determination and enforcement of periodic optimal animal stocking quotas and implementation of realistic policies to relocate and/or market the excess cattle; and

(iii) Ensuring rangeland preservation by establishing range reserves from which livestock would be periodically excluded, on some predetermined national basis.

C. Conservation, Development and Utilization of Renewable Natural Resources

14. The Conservation, development and rational utilization of renewable resources, especially of the soil, forest and other vegetation, fisheries, and wildlife in drought-prone areas can help prevent the recurrence of future drought and alleviate the impacts of already recurring droughts. African countries, therefore, need to intensify and increase their on-going soil, water, forestry and wildlife conservation and development programmes by many fold not only to serve as gene banks and help prevent famine but also contribute towards the reclamation, and rehabilitation of already degraded areas plus the provision of the badly needed forest and wildlife products, such as fuelwood, construction materials, and wild meat. Furthermore, African countries must take especial effort to help curb the vastly occurring bush fires and process of deforestation for the purposes of shifting agriculture and export while at the same time launching mass conscientization efforts of the need to conserve, develop and manage, natural resources both for the benefit of present and future generations. In as much as over 90 percent of African rural population use biomass or fuelwood for their daily energy requirements, African countries are also urged to look into all alternative sources of energy and promote those found to be appropriate.

D. Water & Energy Resources Development and Management

15. Since water is a critical survival factor, during a period of drought, an urgent need exists for the establishment of water supply systems and the provision of the necessary operation and maintenance infrastructures. In this respect drought-affected countries should formulate a comprehensive programme for optimizing the use of water resources for irrigation and pastoral development among other uses for progressive implementation of water resources projects.., specific objectives and time targets, both in the short-term and long-term,

should be developed. Emergency water-points such as boreholes, underground dams, surface reservoir, in the drought-affected and adjacent areas should be established, taking into account the appropriate environmental and health considerations. Special attention should be given to water management for irrigation so as to avoid the wastage of this rare resource, by maximizing agricultural production per unit volume of available water and the final stage of the salinization of poorly irrigated land. The development of small irrigation schemes should equally beneficial to small farmers through the special encouragement given during periods of drought.

16. The diseases which are a major concern in the physical environment of countries affected by the drought, suggest that environmental health should be the starting point for all health activities in the countries concerned. Among the most deficient aspects of environmental health particular mention should be made of housing, water supply and sanitation, vector control, community facilities and health services. The provision of these elements is a prerequisite to the restoration of the people's health, which in turn has a direct effect on their working capacity.

17. Also since prolonged drought reduces wood production and hydro-electric power supply with the fall in the water level of large dams, African countries need to develop alternative support sources of energy such as thermal, solar and wind, as back-up to hydro-electric power sources. Since firewood is the principal source of energy in Africa, priority should be given to afforestation and reforestation including fuelwood plantations, village and family woodlots and greenbelts. Projects should also be carried out for the development of alternative and supplementary sources to meet the energy requirements of the people on an ecological sound basis.

E. Research and Data-Collection, Analysis and Dissemination

13. The availability of reliable data on the climatic and impact aspects of drought as well as on the human responses to drought and the manner in which such data is analyzed, disseminated and utilized are crucial in understanding the drought phenomenon, preparing for it and successfully mitigating its adverse impacts. It is important, as such, that the following data should be systematically gathered, analyzed and disseminated as early as possible:

1. Precipitations in drought conditions;
2. Population movements, particularly in and around areas under drought conditions, and their motivations;
3. Drought-resistant and drought-tolerant species of wild plants and animals to improve the stock of cultivated plants and domestic animals in arid and semi-arid lands;
4. Local perceptions, traditional social and cultural adaptations and responses to drought;
5. Human conditions and demographic trends under a drought situation (mortality, disease, malnutrition, etc...)
6. Integrated agricultural statistics (seasonal variations of area under cultivation, soil conditions and quantum and quality of crop production, harvest and post-harvest losses, livestock population dynamics, pests, diseases, pricing policies and trends, etc...);
7. Socio-economic indicators (poverty, income distribution, unemployment as related to drought etc...), cost of living surveys;
8. Inventory of water resources (availability and location of emergency water resources points, application of meteorological data to irrigation agriculture and to rain-fed agriculture).

19. National research centres, universities and higher learning institutions should be encouraged to undertake the gathering and analysis of the multi-disciplinary data in the aforementioned applied fields. A national focal point should be designated to retrieve this data, analyze and disseminate it in an efficient manner to the different users, as a national back-up repository, including the afore-hand proposed national early warning systems.

F. Training, Utilisation of Manpower and Institutional Development

20. To prepare for sound planning for the development of a better manpower and institutional capability as related to drought as well as for the implementation of such plans in the medium- and long-terms, actions at the national level need to be taken as follows:

1. Preparation of an inventory of existing manpower and institutional capabilities including:
   (a) Preparation of a national directory of drought specialists to include scientists working on drought problems such as climatologists arid land management, specialists in the fields of agriculture, range and water management; integrated rural development specialists and meteorologists, environmental management specialists, ecologists, geographers and so on; and
   (b) Preparation of a national directory of training institutions that can handle or can be developed to handle drought-related manpower development and training.
2. Identification and strengthening of additional training and institutional infrastructure.

3. Identify needs and assure the training of maintenance personnel for the infrastructure to combat the impact of drought and desertification such as equipment and materials for irrigation and the production of hydro-electricity;

4. Assure the professional training of middle level manpower that would allow for an easy conversion of labour in affected populations, particularly the youths and women, within the context of programmes to develop new lands and promote productive activities;

5. Elaborate and initiate special labour intensive public works programmes in the form of paid community worth for the development and maintenance of vital infrastructure in drought affected zones, labour intensive activities should be used for:

   (i) supply of vital infrastructure to combat drought and desertification in the form of construction and rehabilitation of roads, irrigation works, construction of small hydro-electric dams and management of water reservoirs etc.;

   (ii) re-afforestation projects and soil conservation;

   (iii) construction of schools, settlements, health centres and silos.

6. Develop and encourage the organization of co-operatives and ensure the training of drought affected populations in the co-operative management of production, commercialization, creation of cereal banks and the purchase of equipment for production.

REGIONAL LEVEL

A. Regional Inter-Agency Working Group on Drought in Africa

21. African governments are calling on the participating United Nations and regional bodies that prepared and co-sponsored the Scientific Round Table on the Climatic Situation and Drought in Africa to constitute themselves into a "Regional Inter-Agency Working Group on Drought in Africa "RIWGDS". The RIWGDA shall have the following mandate in collaboration with the OAU Committee on Drought:

1. Monitor the progress of the implementation of the Regional Plan of Action to Combat the Impacts of Drought in Africa;
2. Co-ordinate inter-agency drought-related activities in Africa;
3. Strengthen inter-agency collaboration in the field of drought-related activities; and
4. Develop common strategies for an inter-agency and integrated approach to deal with the drought problem.

22. The RIWGDA, whose Secretariat shall be the Economic Commission for Africa, should meet once a year and should submit a biennial report on its activities to the ECA Joint Inter-governmental Regional Committee on Human Settlements and Environment which, in turn, shall make recommendations, as appropriate, on that report to the Conference of Ministers of ECA.

INTERNATIONAL LEVEL

A. Food Aid and Post-Emergency Assistance

23. In view of the lingering hazard of drought and the current and expected shortages in the food supply situation in Africa, members of the international community are urgently called upon to increase their assistance to the drought stricken countries so that their immediate and post-emergency needs can be adequately met and human suffering alleviated. International food aid should be

limited to meet immediate and projected deficits to ensure that extended food aid does not become a disincentive to local production as soon as seasonal conditions permit. For the post emergency period seed, fertilizer, tools, vaccines equipment and related facilities for the ceneventual of animal diseases are also required to revitalize local production and self-sufficiency.

B. Strengthening of Meteorological and Hydrological Services

The relevant United Nations agencies are called upon to assist African member states in their efforts to strengthen their national Meteorological and Hydrological services, especially in the following areas : (a) promotion of the appreciation of the applications of meteorological and hydrological information to the alleviation of the effects of drought; (b) upgrading of the capabilities of existing data-gathering stations, particularly in terms of instruments and consumables; (c) evaluation of the densities of existing surface and upper-air stations with a view to increasing their number; (d) acquisition, maintenance and operation of equipment for the conservation, processing and dissemination of meteorological and hydrological data; (e) training of manpower, particularly with a view to a l better interface with specialists of other disciplines dealing with drought. The above assistance may be provided in many forms, including funds, equipment, services of experts and consultants, seminars and workshops.

C. Support to National Drought-Related Research, Training and Institution Building

25. International research organizations, bilaterial and multilateral donors, organizations of the United Nations system and other donors are called upon to provide support to the African government and national institutions in their efforts to national research, training and institutional capabilities in the drought-related priority areas as outlined above, to strengthen the national means for research and training, and the utilisation in common of existing institutions in the priority areas of drought control as outlined above.

II - MEDIUM-TERM MEASURES

26. The medium-term refers to measures that need to be implemented during the period 1986-1990. Nevertheless planning and other preparations for the implementation of these measures should commence at the beginning of the short-term period. At the end of the medium-term, an evaluation exercise should be undertaken to assess the impact and the progress in the implementation of the Regional Plan of Action.

NATIONAL LEVEL

A. Climate

27. In the medium-term, African countries should adopt measures that would ensure the better use and application of existing wather and climate information with a view to improving the operational practices in agriculture, livestock, fisheries water management and energy supply by:

(i) enhancing and developing national early warning systems to detect meteorological drought and provide inputs to determine agricultural drought on the basis of improved and appropriate agrometeorological information within the country;

(ii) developing a practical system to provide timely and effective advice to farmers and government agencies which should include the following in particular:

(a) development of probabilities of rainfall amounts and timing for improved planning of agricultural operations such as seeding and harvesting;

(b) analysis of temperature, humidity and wind data for more efficient cultivation of irrigated crops;

(c) dissemination of running observations of rainfall, temperature, humidity and wind before and throughout a growing season to estimate the water balance and soil moisture potential for crops under rain-fed agriculture;

(d) rapid analysis and dissemination of relevant weather data which affects the development and spread of crop pests and diseases; and

(iii) strengthening the data-gathering networks and national meteorological services, establishing or improving the capabilities of the national data banks and/or climate information and users services centres and ensuring that meteorological and agro-meteorological data and information will be collected, analyzed and disseminated in an integrated manner.

B. Food and Agriculture

28. In the medium-term policies and programmes for food and agricultural production in drought-stricken and droght-prone countries will have to be reviewed and appropriate policies evolved with a view to rehabilitating this vital sector for the improvement of food production growth rates through the introduction of improved techniques and appropriate incentives to the farmers and livestock owners. Such measures should include, inter-alia, the following:

1. Reduction of Post-harvest Food Losses

Sustained efforts must be made to reduce post-harvest food losses, which vary from between 20 percent to 40 percent of total production, in order to achieve, at least, the target of 50 percent reductinn in food losses set by the Lagos Plan of Actinn.

Additional resources will need to be mobilized to apply post-harvest technology for food grains and other agricultural products such as improved farm and storage structures, design and management of pilot warehouses, provision of grain driers, improvement of kprocessing facilities, rodent pest control and training in all aspects of post-harvest loss reduction.

2. Technology packages for increasing Food Production

Priority should be given to evolving technological packages such as drought-resistant seed varieties, fertilizers, plant protection measures, weed control, and water use control for use in the differenct agroclimatic zones of drought-prone countries to increase crop yields and productivity. Adequate input supplies, training and extension services, credit facilities and incentives to farmers are necessary elements for the successful implementation of this measure.

3. Changing Food Habits and Promotion of Food substitutes

To help lessen dependence on food imports, food technology must be developed for the production of tasty food using locally-produced cereals such as rice, millet, sorghum and root crops. Involvement of women and nutrition specialists should play an important role in achieving the desired results. sustained efforts should also be made to exploit the existing fresh-water and lake fisheries potential and reduce losses in storage and marketing.

4. Fresh water Fisheries

Inland fisheries, even if they are seasonal or permanent, are an economic activity of entire population in some African countries. During drought, these are negative impacts when water level is reduced in lakes, flood plains, rivers and pools. Emergency measures should be planned including the development of fisheries away from drought areas.

5. Agricultural Pricing Policies

Appropriate pricing policies and incentives should be introduced to induce farmers, particularly small farmers, to adopt and invest in improved agricultural practices and technical inputs.

C. Water and Soil Conservation

29. Necessary steps should be taken to exploit water resources for irrigation in low-rainfall drought-prone areas by making use of conservation techniques in water use and maintenance of good soil conditions. Also intensive soil conservation practices even in other areas, must be integrated in the over-all agricultural activities.

D. Research and Data-Collection Analysis and Dissemination

30. The research and data-collection analysis and dissemination effort that has been started in the short-term should continue in the medium-term. In addition activities in the medium-term should further concentrate on the following:

1. Unification of the methods for the collection of the multidisciplinary data and improvement of the co-ordinated storage, processing, analysis and dissemination of such data from a central focal point, such as climate data banks, and strengthening of cooperation between the climatic and impact national data-gathering networks;

2. Carrying out research towards the understanding of weather and climate systems in Africa which may lead to the understanding of the causes of drought and to its early detection and forecasting.

3. Intensification of research on appropriate technology packages, crop production systems, water and soil use and conservation methods, reduction of food losses, changing of food habits and substitute food designed to increase agricultural yield and productivity, develop livestock production and reduce food losses and imports; and the

4. establishment of modalities for cooperatinn with other African member States for the exchange of data and information on the climatic and impact aspects of drought and human responses to it.

5. Proper inventory and evaluation of land resources must be carried out in the effort to come out with proper land use plans that will lead to national utilization of the resource, based on site potential. Moreover, the implementation of the developed plans should be monitored regularly to ensure and regulate proper land utilization.

E. Manpower and Institutional Development

31. African countries should establish a programme for manpower development and the strengthening of institutions to cover the climatic and impact aspects of drought according to the requirements indicated in the preceeding relevant sections of the plan of Action. This should include facilities for refresher courses and workshops and the exchange of expertise between African countries.

REGIONAL LEVEL

A. Inter-State Exchange of Data, Information and Studies

32. African countries should establish modalities for the exchange of data, information and studies on the climatic and impact aspects of frought and human responses to it as well as other drought-related socio-economic and ecological aspects and national experiences on dealing with the drought situation on a regular and co-ordinated manner. Such modalities should include the co-ordinated analysis of the available data on a regional basis and its effective dissemination throughout the region.

B. Sub-regional Drought-Control Organization

33. Consideration should be given to the possibility of the establishment of sub-regional drought-control organizations such as the Permanent Inter-State Committee on Drought Control in the Sahel (CILSS), using the latter's experience.

C. Regional Training and Research Institutions

34. All the relevant regional and sub-regional training and research institutes in Africa are called upon to assist African countries by intensifying their drought-related training and research activities both on the climatic and impact aspects of drought.

D. Interstate Cooperation on Marketing

35. African countries should strengthen cooperation between them as concerns the commercialization of agricultural products, livestock and fish in order to achieve a balance between deficit countries and those better placed on the basis of a regional pricing policy.

F. Construction, Improvement and Maintenance of a Region-Wide System in the Sahel of All-Weather Feeder Roads

36. The United Nations Sudano-Sahelian Office(UNSO) is urged to continue its activities for the construction, improvement and maintenance of a region-wide system in the Sahel of all-weather feeder roads, which are considered essential to provide year-round access to sisolated, drought-affected or drought-prone areas. Programmes of a similar nature should be introduced to other regions of Africa which are affected by the drought.

G. Mid-Term Evaluation

37. The Regional Inter-Agency Working Group on Drought in Africa (RIWGDA) is called upon to undertake, in close collaboration with African countries, a mid-term evaluation exercise in 1989 to assess the progress in the implementation of the Regional Plan of Action to Combat the Impacts of Drought in Africa and the general impact of the Plan on development activities in Africa.

INTERNATIONAL LEVEL

A. Manpower Training and Institutional Capability Development

38. Organizations of the United Nations System and other internatinnal organizations, are called upon to assist African countries in the training of their manpower in all subjects related to drought and the strengthening of the institutional capabilities of national meteorological and hydrological services as well as the establishment of sub-regional climatic data banks.

B. Data and Studies on Drought

39. Organizations of the United Nations System and other international bodies are called upon to assist African countries in studying the causes of drought and ensuring that the necessary data to detect drought and warn governments of impending drought conditions are available.

LONG-TERM MEASURES

40. Since it is evident that drought is a recurrent periodic phenomenon in several parts of Africa, drought-stricken and drought-prone countries should adopt long-term measures that would adapt their planning systems to this reality with a view to devising strategies and policies that would make their economies more versatile and less vulnerable and dependent on the vagaries of climatic variability and drought and minimize the impacts of drought on their populations, environments and economies and maintain and implement those strategies and policies on sustained long-term basis within the overall framework of accelerated self-reliant, socio-economic development in the spirit of the Lagos Plan of Action.

41. To this end, it is recommended that the United Nations system and the international community support the efforts of African Governments to carry out the following long-term activities in the decade 1990 to year 2000 :

(a) Multidisciplinary research work

Multidisciplinary research programmes should be developed on various problems areas identified so far, such as:

(i) intensification of the research on understanding the weather and climate systems in Africa which may lead to the understanding of the causes of drought and its early detection and forecasting.

(ii) on the man-made effects on climate caused by over-grazing deforestation and other activities;

(iii) on the adaptability of traditional systems of cultivation to climate variability; and

(iv) on the sustainability of long-term agricultural production for employment and income generating and for the alleviation of mass poverty.

(b) Conservation of genetic resources

It is essential to conserve plant and animal genetic resources such as viable seeds with germ plasma in national or international gene banks. Such genetic materials can be used through plant or animal breeding experiments to improve the resistance of crops or cattle and make them less vulnerable to fluctuations of available moisture or to sudden changes in the environment involving pest and diseases outbreak. It may be necessary to prepare a Convention and Protocols on Plant Genetic Resources and Gene Banks in the long run.

42. At the same time, there is also need to gain more knowledge of the causes and mechanics of drought in Africa and of better methods for the detection of drought to make this kind of long-term planning more meaningful. In this context the relevant United Nations Organizations are called upon to further intensity their efforts and make this additional knowledge available to African countries.